

BRIK, S.D., inzh.

~~Using ultrasonic techniques in detecting defects.~~ Biul. TSNIICHM  
no.22:39-46 '57. (MIRA 11:5)  
(Ultrasonic waves--Industrial applications)

BRIK, S.D., referent.

Instrument for rapid determination of carbon, phosphorus, and  
sulfur content in steel. *Bul. TSNIICEM* no.1:58 '58. (MIRA 11:5)  
(Photoelectric measurements) (Steel--Metallography)

BRIK, S.D.; VITKINA, E.I.

Low-alloyed steels used for making weld high-pressure boilers.  
Hil. TSNIICM no.2:35-39 '58. (MIRA 11:5)  
(Steel alloys) (Boilers)

BRUK, S.D., inzh.

Effect of alloying elements on the strain ageing of low-carbon  
steels. Bul. TSNIICM no. 5:35-42 '58. (MIRA 11:5)  
(Steel alloys—Testing)

BRIK, S.D., referent.

Instrument for testing the torsional yield limit of spring wire.  
Bul. TSNIICHM no.6:61 '58. (MIRA 11:5)  
(Wire--Testing)

BRIK, S.D., referent

Partly replacing molybdenum by vanadium in heat-resistant, low-alloy steel (from "Iron Age" no.5, 1957, "Iron and Coal" no. 4667, 1957).  
Biul. TSNIICHM no.7:53-55 '58. (MIRA 11:6)  
(Heat-resistant alloys) (Iron-molybdenum alloys) (Vanadium steel)

BRIK, S.D., referent

Production of nonaging steels containing boron (from "Journal  
of Metals" no. 6, 1957). Biul. TSNIICHM no.7:56-59 '58. (MIRA 11:6)  
(United States--Boron steel)

BRIK, S.D., referent

Effect of deformation ageing on the fatigue limit of low-carbon  
steel. *Biul. TSNIICM* no. 8:53 '58. (MIRA 11:7)  
(Steel fatigue)

BRUK, S.D., inzh.

Using gamma-ray radiology in metal-rolling abroad. Biul. TSHIICHM  
no. 9:33-38 '58. (MIRA 11:7)

(Rolling(Metalwork))

(Radioisotopes--Industrial applications)

BRIK, S.D., referent

Effect of ultrasonic waves on the electrodeposition of metals.  
Biul. TSNIICM no. 9:61-62 '58. (MIRA 11:7)  
(Electroplating)  
(Ultrasonic waves--Industrial applications)

BRIK, S.D., inzh.

~~SECRET~~ New physical methods of steel analysis abroad. Biul. TSNIICHM  
no. 10:21-30 '58. (MIRA 11:7)  
(Steel--Metallography)

~~BRIK, S.D.~~, referent

Investigating steel breaking surfaces on electron microscopes.  
Bul. TSNIIGM no. 10:59-62 '58. (MIRA 11:7)  
(Steel testing)  
(Electron microscope)

BRIK, S.D., inzh.

Properties of steel made in converters with use of oxygen. Biul.  
TSIICHM no.9:26-38 '60. (MIRA 15:4)  
(Bessemer process) (Steel--Testing)

BRIK, S.D., referent

Tertiary recrystallization of cold-rolled silicon steel [from  
"Journal of Metals," no.9, 1958; "Transactions of the Metallurgical  
Society of AIME," no.3, 1959]. Biul.TSIICHM no.9:55-57 '60.

(Silicon steel—Metallography)

(MIRA 15:4)

BRIK, S.D., referent

Equipment for the metallography of large metal products in shop conditions [from "Metal Progress," no.5, 1959]. Biul. TSIICHM no.10:59-60 '60. (MIRA 15:4)  
(Surfaces (Technology)) (Metallography)

BRIK, S.D., inzh.

Properties of steel produced by continuous casting. Biul.  
TSIICHM no.1:29-35 '61. (MIRA 14:9)  
(Continuous casting) (Steel--Testing)

BRIK, S.D., referent

Improving the structure of cast rapid steel [from "Iron  
Age," no. 27, 1959]. *Biul. TSIICHM* no.2:60 '61. (MIRA 14:9)  
(United States--Steel)

BRUK, S.D., inzh.

New tool steels for forming operations in the United States.  
Biul TSIICHM no.3:17-20 '61. (MIRA 14:12)  
(United States--Tool steels)  
(Dies (Metalworking))

BRUK, S.D., referent

Properties of low-carbon steel degasified during the pouring  
under vacuum [from "Revue de Métallurgie," no.6, 1960].  
Biul. TSIICHM no.3:60-62 :61. (MIRA 14:12)  
(France--Vacuum metallurgy)

ERIK, S.D., inzh.

Nonmetallic inclusions in steel and new methods of their  
detection. Bul. TSIICM no.5:16-25 '61. (MIRA 14:10)  
(Steel--Defects)  
(Metallography)

BRIK, S.D., referent

Ingot quality improvement by the vibration of liquid steel in  
ingot molds [from "Revue de Metallurgie," no.6, 1960]. Biul.  
TSIICHM no.5:54 '61. (MIRA 14:10)  
(France—Steel ingots)

ERIK, S.D., referent

Heat treatment of anticraepers [from "Iron and Steel Engineer,"  
no. 7, 1960]. Biul. TSICEM no.5:59-61 '61. (MIRA 14:10)  
(United States--Steel--Heat treatment)

BRIK, S.D.; PARTSEVSKIY, A.B.; GOL'DEN, Ya.A., glav. red.

[Ferrous metallurgy research institutes in capitalist countries]  
Nauchno-issledovatel'skie uchrezhdenia chernoi metallurgii ka-  
pitalisticheskikh stran. Moskva, TSentr. in-t informatsii cher-  
noi metallurgii, 1962. 55 p. (MIRA 16:3)  
(Metallurgical research) (Iron--Metallurgy)  
(Steel--Metallurgy)

9(6)

SOV/112-59-3-5574

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 3, p 186 (USSR)

AUTHOR: Ginzburg, S. A., and Brik, V. A.

TITLE: Computer for Investigating the Indicial Equations of Automatic-Control Systems (Vychislitel'naya mashina dlya issledovaniya kharakteristicheskikh uravneniy sistem avtomaticheskogo regulirovaniya)

PERIODICAL: V sb.: Mezhevuz. konferentsiya po primeneniyu modelirovaniya v elektrotekhn. zadachakh i matem. modelirovaniya. M., 1957, p 184

ABSTRACT: An analog electromechanical computer permits analyzing polynomials of 10th power of the form  $\omega = \sum_0^{10} a_n z_n$ , where  $a_n$  are real or complex

coefficients; the computer can automatically construct the Mikhaylov's hodograph for a closed automatic-control system, can determine a polynomial root locus on the complex plane  $z$ , multiple roots, and can also solve other

Card 1/2

SOV/112-59-3-5574

Computer for Investigating the Indicial Equations of Automatic-Control Systems

problems associated with investigations of an automatic-control system. By changing  $z$  arbitrarily, a corresponding curve on the plane  $w$  can be obtained, or vice versa. An electron-beam afterglow-type tube screen can be used as a plane  $z$  or  $w$ . In determining the roots of equations of an automatic-control system, modules and arguments can be approximately figured out from the tube screen and then can be accurately read from special scales. The computer error is 2% or less for the module and  $2^\circ$  for the argument. Most problems can be solved in a few minutes. The computer has been developed and tested by TsLEM, Mosenergo.

I. L. M.

Card 2/2

AUTHORS: Brik, V. A., Ginzburg, S. A. (Moscow) 103-19-7-5/9

TITLE: A Computer Which Constructs the Conformal Mappings for N-Order Polynomials (Vychislitel'naya mashina, vpolnyayushchaya postroyeniye konformnykh otobrazheniy dlya stepennogo polinoma)

PERIODICAL: Avtomatika i telemekhanika, 1958, Vol. 19, Nr 7, pp. 674 - 683 (USSR)

ABSTRACT: The construction of the conformal mappings of a complex plane Z upon the plane W and vice versa for the equation

$$a_0 + a_1 Z + a_2 Z^2 + \dots + a_n Z^n = W \quad (1)$$

is of great practical importance in the investigation of automatic control systems. Here a machine which was worked out in the TsLEM Mosenergo (Central Laboratory and Experimental Workshops of the Power Supply System Moscow) is described. It permits to perform operations of the conformal transformation for polynomials including the 10<sup>th</sup> degree. This machine makes possible the construction of the mappings of any points and curves from the plane Z to the plane W (direct maps) and of some points (and sections) from W to Z (reversal maps). The complex numbers are represented

Card 1/3

A Computer Which Constructs the Conformal Mappings  
for N-Order Polynomials

103-19-7-5/9

by sinusoidal voltages of constant frequency (50 c). Before the polynomial is introduced into the machine it must be transformed mathematically. The form (4) is derived and in this form the polynomial is introduced into the machine. The block scheme of the machine is given. The most fundamental part of it is the functional transformer which produces 2 voltages  $W$  and  $z$ . The phase sensitive scheme 2 decomposes the sinusoidal voltage (which represents a complex number) applied to it into 2 voltages which are proportional to the real and imaginary component. These voltages are applied to the deflecting plates of the cathode ray tube the screen of which represents a complex plane. The electron zero device 3 responds when its input voltage approaches zero. Subsequently the electric diagram of the machine is described. It is shown that the construction of the direct transformation in the machine is performed by means of introduction of those  $z$ -values the transformation of which is to take place. The construction of the reversal transformations, however, is performed after the method of scanning the plane. I.e. the variable  $z$  varies on the one or the other way until the required quantity  $W$  appears at the output. The fundamental practical problems for the machine are the

Card 2/3

A Computer Which Constructs the Conformal Mappings  
For N-Order Polynomials

103-19-7-5/9

determination of the polynomial roots and the construction of the hodograph by Mikhaylov. In the last case a direct map is constructed. The solution of the problem for the determination of the roots (under application of the automatic introduction of  $z$ ) is described in detail. For the illustration of the accuracy of the solution by means of the machine, examples are given. The machine described here was produced in the TsLEM Mosenergo in two specimens and they are used in the Laboratory for Dynamic Models at the MEI (Moscow Institute of Power Engineering) and in the VNIIE MES for the solution of problems which are connected with the stability of the operation in the energy systems. There are 6 figures, 1 table, and 10 references, 7 of which are Soviet.

SUBMITTED:

July 4, 1957

1. Control systems--Analysis
2. Conformal mapping
3. Mathematical computers--Performance
4. Mathematical computers--Equipment

Card 3/3

BRIK, V. A., Cand Tech Sci -- (diss) "Research and Development of a Computing Device for Programming the Machining of Parts for General Machine Construction," Moscow, 1960, 14 pp, 120 copies (Moscow Power Engineering Institute) (KL, 46/60, 125)

BRIK, V.A.

PHASE I BOOK EXPOSITION 509/L111

Konferentsiya po voprosam teorii i prikladnykh distretsoykh avtomaticheskikh sistem, Moscow, 1958

Teoriya i prikladnyye distretsoykh avtomaticheskikh sistem: trudy konferentsii (Theory and Application of Discrete Automatic Systems) Translations of the Conference, Moscow, M. SSSR, 1960. 372 p. 5,000 copies printed.

Spektralnyy koeffitsiyent i telemekhanika. Institut avtomatiki i telemekhaniki. Sbornik nauchnykh i inzhenernykh rabot. Institut avtomatiki i telemekhaniki.

Editorial Board: M.A. Gavrilov, Doctor of Technical Sciences, Yu. Y. Doljopoldo, Doctor of Technical Sciences, Ya. A. Kovalchik, Candidate of Technical Sciences, A. Ya. Lerner, Doctor of Technical Sciences, I. I. Poldnam, Doctor of Technical Sciences, G. S. Pospelov, Doctor of Technical Sciences, and Ya. Z. Tsypkin, Doctor of Technical Sciences; A. V. Kharinov, Candidate of Technical Sciences, and M. I. Kuznetsov, Doctor of Technical Sciences, M. I. Publishing House; M. M. Podgornykh; Tech. Ed.: S. G. Markovitch.

Purpose: These transactions are intended for the members of the conference and other specialists in automatic control.

CONTENTS: The Conference on the Problems of Theory and Application of Discrete Automatic Systems took place in Moscow from September 22 to 26, 1958. It was the first conference devoted to discussions of the present status of the theory and techniques of discrete automatic systems and to planning for future developments. The papers discussed at the conference have been divided into four groups. In the first group optimization switching circuits are discussed as well as methods of relay control systems, in particular plant lag control systems. The second group is devoted to the analysis and synthesis of pulse systems. The third group of papers is devoted to the analysis and synthesis of pulse systems. The fourth group of papers is devoted to the analysis and synthesis of pulse systems and descriptions of some discrete systems. Problems of control of pulse systems and descriptions of some pulse systems are also included. The third group of papers deals with problems of control of discrete systems and descriptions of some discrete systems. Problems of the automation of various fields of engineering, i.e., power engineering, mining, radio communication, metallurgy, etc., are discussed. Problems of analog-digital conversion and vice versa as well as problems of design of specialized functional converters have been included in this group. Papers in this group of papers include theoretical elements and certain practical applications of the simplest types of self-tuning systems, optimal control systems, and systems which are developed as relay, pulse and digital systems. Here are also found papers describing various methods of investigating steady state conditions in optimizing systems, results of studying the effects of random factors on the process of automatic searching, and examples of existing optimizing control systems. Some of the more interesting communications have also been included in the discussion of the various oral presentations. The fourth group of papers includes theoretical elements and certain practical applications of the simplest types of self-tuning systems, optimal control systems, and systems which are developed as relay, pulse and digital systems. Here are also found papers describing various methods of investigating steady state conditions in optimizing systems, results of studying the effects of random factors on the process of automatic searching, and examples of existing optimizing control systems. Some of the more interesting communications have also been included in the discussion of the various oral presentations. The fourth group of papers includes theoretical elements and certain practical applications of the simplest types of self-tuning systems, optimal control systems, and systems which are developed as relay, pulse and digital systems. Here are also found papers describing various methods of investigating steady state conditions in optimizing systems, results of studying the effects of random factors on the process of automatic searching, and examples of existing optimizing control systems. Some of the more interesting communications have also been included in the discussion of the various oral presentations.

Brik, V.A. (Moscow). Digital Computer for Programmed Control. The author describes a simple computer for controlling machine tools providing details consisting of straight lines and circles. There are no references. 352

Moskatov, G.G. (Leningrad). A Method for Computing Linear Combinations of Functions Which is Based on Methods Excluding Multiplication. There are no references. 360

Parfenov, P. P. (Moscow). High Capacity Universal Machine for Analyzing Soley Circuits. The author describes the machine which he developed under the supervision of Professor M.A. Gavrilov, Doctor of Technical Sciences. There are 6 references, 4 Soviet and 2 English. 365

Baillermayr, Yu. Ya. (Moscow). Certain Transformations of Finite State Automata. The paper discusses finite deterministic automata with a fixed structure representing arbitrary events determined by several states. The author formulates a system of equations based on conceptions of logical class functions. He discusses ideas on transition matrices, equivalence and equipolence. He also describes some interesting experiments. There are 6 references, 5 Soviet and 1 English. 371

S/103/60/021/05/06/013  
B007/B011

AUTHOR: Brik, V. A. (Moscow)

TITLE: Error Accumulation in Operations on Digital Computers <sup>16</sup>

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 5,  
pp. 595 - 600

TEXT: The present paper offers a statistical method based on the theory of wandering, for estimating the errors in digital counters used in automatic control systems as well as in special and universal computers. This method consists in the following: With a given number  $n$  of cycles and given dispersion  $\sigma^2$ , such a value  $a$  may be regarded as the greatest possible error  $D_n$  ( $D_n$  being the maximum among all  $\Delta_i$ ,  $i = 1, 2, \dots, n$ ), for which  $P_0(n)$  equates a certain sufficiently small quantity  $\alpha$ .

$P_0(n)$  is the probability of the wandering point lying at least once outside the screen within  $n$  cycles. Fig. 3 shows the dependence of  $D_n/\sigma$  <sup>✓</sup>

Card 1/2

Error Accumulation in Operations on  
Digital Computers

S/103/60/021/05/06/013  
B007/B011

on  $n$  at different values of  $\alpha$ . This diagram offers the answer as to the practical limit of the error  $\Delta_i$  ( $i = 1, 2, \dots, n$ ) with a known dispersion  $\sigma^2$  of the error of the cycle. Such diagrams may be used for estimating the errors of an arbitrary computation process in which there occurs an accumulation (addition) of statistically independent successive errors whose mean value is equal to zero, the dispersions are equal to  $\sigma^2$ , and the distributions are almost normal. It is pointed out that also the tables of the function  $y = F(u)$  can be used instead of these diagrams for the determination of  $D_n$ . In a similar way, the accumulating errors can be estimated also in such cases where the normally distributed independent quantities  $\delta_i$  have non-zero mean values.  $\delta_i$  is a random quantity forming a sum from four independent random quantities. Mention is made of papers by M. S. Barlett (Refs. 4, 5). There are 5 figures, 1 table, and 7 references: 5 Soviet and 2 English.

SUBMITTED: December 26, 1959

Card 2/2

✓

26161

S/044/61/000/005/024/025  
C111/C444

9,7100

AUTHOR: Brik, V. A.

TITLE: Digital computer for program control

PERIODICAL: Referativnyy zhurnal, Matematika, no. 5, 1961, 44,  
abstract 5V307. (Teoriya i primeneniye diskretn. avtomat.  
sistem, M., ANSSSR, 1960, 352 - 359)

TEXT: Considered is the digital control computer, developed by  
the author, in order to compute the coordinates of the straight line  
and of the circle, needed for controlling the work-tables. The para-  
meter equations of the circle and of the straight line are represented  
by aid of identical recurrent relations by sine and cosine of small  
angles which are approximated by second powers. The step on the circle  
can be chosen such that the arising summary error is not higher than  
the tolerance of the production. The bloc-scheme of the computer is  
given, its working for the determination of the coordinates of the  
points of the circle and of the straight line is analised and compared.

(Abstracter's note: Complete translation.)

Card 1/1

BRIK, V. A.

S/121/61/000/003/006/006  
D040/D112

AUTHOR: None given

TITLE: Dissertations

PERIODICAL: Stanki i instrument, no.3, 1961, 41

TEXT: Titles are published of four dissertations for the degree of Candidate of Technical Sciences: 1) V.A. Brik, Moskovskiy ordena Lenina energeticheskiy institut (Moscow "Order of Lenin" Power Engineering Institute), "Design development and investigation of a computer arrangement for programming the machining of general machine parts"; 2) T'ang Yung-huong, Moskovskiy stankoinstrumental'nyy institut im. I.V. Stalina (Moscow Institute of Machine Tools and Instruments im. I.V. Stalin), "Automation of nonperiodical motions of automatic machine tools"; 3) Liu Wen-fu, Moscow Institute of Machine Tools and Instruments im. I.V. Stalin, "Investigation of thread formation by thread-cutting and thread-rolling heads"; 4) V.M. Zaytsev, Moskovskiy aviatsionnyy tekhnologicheskiy institut (Moscow Aviation Technological Institute), "The efficiency of coolants in turning stainless and

Card 1/2

Dissertations

S/121/61/000/003/006/006  
D040/D112

heat-resistant materials".

[Abstracter's note: Complete translation].

CARD 2/2

BRIK, Vladimir Arkad'yevich, kand.tekhn.nauk, nauchnyy sotrudnik

Automatic construction of Mikhailov's hodograph. Izv. vys. ucheb.  
zav.; elektromekh. 4 no.12:96-98 '61. (MIRA 15:1)

1. Laboratoriya diskretnykh avtomaticheskikh sistem instituta  
avtomatiki i telemekhaniki AN SSSR.

(Automatic control) (Cathode ray oscillograph)

9.7000

S/024/62/000/005/008/012  
E140/E135

**AUTHOR:** Brik, V.A. (Moscow)

**TITLE:** The optimal choice of parameters of digital computers for given precision

**PERIODICAL:** Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Energetika i avtomatika, no.5, 1962, 123-130

**TEXT:** The problem considered is the optimal choice of digital computer parameters for special-purpose computers, e.g. DDA used for machine-tool control. The problem reduces to finding an extreme value of a certain function of the system parameters - number of digits required for representation of numerical data in the system, number of additional places to eliminate the effects of truncation error, memory capacity, integration step, rounding-off processes, etc. On these parameters a system of linear constraints is placed. The constrained system corresponds to a hypersurface in the parameter space, and the required optimum is found within the hypersurface, either at an extreme value or, if

Card 1/2

The optimal choice of parameters...

S/024/62/000/005/008/012  
E140/E135

such is not enclosed by the hypersurface, at the lowest (highest) point just within the hypersurface. A specific example is worked out for a two-integrator system intended to supply the coordinates of circles to a linear interpolator. In general the solution to the problem posed in the article is obtained by the methods of nonlinear programming. For the case analysed in detail graphical methods suffice. There are 3 figures.

SUBMITTED: October 31, 1961

Card 2/2

BRIK, V. A.

55

PHASE I BOOK EXPLOITATION SOV/6012

Academiya nauk SSSR. Institut avtomatiki i telemekhaniki.

Avtomaticheskoye regulirovaniye i upravleniye (Automatic Regulation and Control) Moscow, Izd-vo AN SSSR, 1962. 526 p. Errata slip inserted. 9000 copies printed.

Resp. Ed.: Ya. Z. Tsypkin, Professor, Doctor of Technical Sciences; Ed. of Publishing House: Ye. M. Grigor'yev; Tech. Ed.: I. N. Dorokhina.

PURPOSE: This book is intended for scientific research workers and engineers concerned with automation.

COVERAGE: The book is a collection of articles consisting of papers delivered at the 7th Conference of Junior Scientists of the Institute of Automation and Telemekhanics, Academy of Sciences USSR, held in March 1960. A wide range of scientific and technical questions relating to automatic regulation and control is covered.

Card 1/12

Automatic Regulation (Cont.)

SOV/6012

The articles are organized in seven sections, including automatic control systems, automatic process control, computing and decision-making devices, automation components and devices, statistical methods in automation, theory of relay circuits and finite automatic systems, and automated electric drives. No personalities are mentioned. References are given at the end of each article.

TABLE OF CONTENTS:

PART I. AUTOMATIC CONTROL SYSTEMS

Andreychikov, B. I. The effect of dry friction and slippage [play] on error during reverse gear operation of servo-feed systems 3

Andreychikov, B. I. Dynamic accuracy of machine tools with programmed control 14

Card 2/12

Automatic Regulation (Cont.)

SOV/6012

PART III. COMPUTING AND DECISION-MAKING DEVICES

Butkovskiy, A. G. Modelling some objects with distributed parameters	242
Brik, V. A. Digital computer for compiling a program for machining parts on a milling machine	248
Gul'ko, F. B. High speed electronic multipliers	265
Novosel'tseva, Zh. A. Modelling controlled delay	274
Rybashov, M. V. One type of functional generator with several inputs	281
Rybashov, M. V. Solution of one type of linear algebraic equations by means of electronic models [analogs]	291

Card 7/12

S/271/63/000/001/045/047  
D413/D308

AUTHOR: Brik, V.A.

TITLE: A digital computer device for compiling programs for machining parts on a milling machine

PERIODICAL: Referativnyy zhurnal, Avtomatika, telemekhanika i vychislitel'naya tekhnika, no. 1, 1963, 61, abstract 1B356 (In collection: Avtomat. regulirovaniye i upr., M., AN SSSR, 1962, 248-264)

TEXT: An experimental model has been built in laboratory no. 7 of the IAT of the AS USSR of a computer device for compiling programs for milling parts whose profiles consist of linear sections and circumferential arcs. The basic feature of the BMO-1 (VPO-1) device is that the milling program is generated in the form of binary coded numbers - the codes for linear increments in the coordinates. The contour of the part is replaced by a set of linear sections, which are worked over by means of a linear interpolator. This method reduces the volume of information fed into the milling

Card 1/2

A digital computer ...

S/271/63/000/001/045/047  
D413/D308

machine. All that remains mounted next to the machine is a relatively simple unit (the linear interpolator). The author gives formulas from which the coordinates of consecutive points on the circumference and straight line are computed, and also formulas for the linear increments generated by the device. The resultant information is put on punched cards. The device is built out of standard units of the 'Ural' digital computer. The general operating algorithm is described, the block diagram of the device is given, and the operation of the main units is discussed in detail: the control unit, arithmetic unit and input unit. The arithmetic unit includes two binary registers, a shifting unit and an adder; the control unit consists of a cadence pulse generator, a pulse counter and a decoder. A list is given of the control signals, the interaction of the main units is discussed in detail, and the sequence is shown for command generation and performance of operations in the device. 9 figures. 4 references.

[Abstracter's note: Complete translation]

Card 2/2

~~BRIX, V/E~~  
BRIX V. E. A case of cholesteatoma with supra-para-sellar localization  
Voprosi Neurochirurgiyi, Moscow 1949, 13/6 (50-52)

In a series of 2,496 verified brain tumours 25 cholesteatomas have been found. Only one of these had developed in the supresellar region; it was removed successfully.

Decker - Munich (VIII,5)

So: Neurology & Psychiatry Section VIII Vol. 3 No. 7-12

BRIK, YE. A.

112-1-1420  
Translation from: Referativnyy Zhurnal, Elektrotehnika, 1957,  
Nr 1, p. 215 (USSR)

AUTHORS: Brik, Ye.A., Girshovich, M.I.

TITLE: Automation of the Drying-and-Impregnating Processes  
of Power Cables (Avtomatizatsiya sushil'no-propitochnogo  
protssessa silovykh kabeley)

PERIODICAL: Inform. tekhn. sb. M-vo elektrotekhn. prom-sti SSSR,  
1956, Nr 4(88), pp.19-21

ABSTRACT: Bibliographic entry

Card 1/1

BRUK, Ye. A.

21(8) **INDEX I BOOK EXPLOITATION** 200/2124

Vserossiyskaya nauchno-issledovatel'skaya konferentsiya po izucheniyu i primeneniyu radioaktivnykh izotopov i ikhcheny y mashinnoy i tekhnicheskoy sistemy i Moskva, 1957.

Trudy... Mashinostroyeniya i priborostroyeniya (Transactions of the All-Union Conference on the Use of Radioisotopes and Stable Isotopes in Machine- and Instrument-Manufacturing Industry. The Industrial Papers Discuss the Applications of Radioisotope Techniques in the Study of Metals and Alloys, Problems of Friction and Lubrication, Metal Cutting, Engine Performance, and Defects in Metals. Several papers are devoted to the use of radioisotopes in the automation of industrial processes, recording and measuring devices, quality control, flowmeters, level gauges, etc. Contributions of various Soviet institutes and laboratories. They were published as Transactions of the All-Union Conference on the Use of Radioisotopes and Stable Isotopes and Radiation in the National Economy and Science, April 4-12, 1957. No personalities are mentioned.

Sponsoring Agencies: USSR. Glavnoye upravleniye po ispol'zovaniyu atomnoy energii, and Akademiya nauk SSSR.

Editorial Board of Set: V.I. Dikuhin, Academician (Resp. Ed.), M.M. Shumilovskiy (Deputy Resp. Ed.), Yu. S. Zaslavskiy (Deputy Resp. Ed.), L.I. Tatchenko, B.I. Verzhovskiy, S.I. Maslov, L.I. Petrovich and M.G. Zeleninskaya (Secretary).

Ed. of Publishing House: P.M. Belyanin; Tech. Ed.: T.F. Pelnova.

FOCUS: This book is intended for specialists in the field of machine and instrument manufacture who use radioactive isotopes in the study of materials and processes.

COVERAGE: This collection of papers covers a very wide field of the utilization of tracer methods in industrial research and control techniques. The topic of this volume is the use of radioisotopes in the machine- and instrument-manufacturing industry. The individual papers discuss the applications of radioisotope techniques in the study of metals and alloys, problems of friction and lubrication, metal cutting, engine performance, and defects in metals. Several papers are devoted to the use of radioisotopes in the automation of industrial processes, recording and measuring devices, quality control, flowmeters, level gauges, etc. Contributions of various Soviet institutes and laboratories. They were published as Transactions of the All-Union Conference on the Use of Radioisotopes and Stable Isotopes and Radiation in the National Economy and Science, April 4-12, 1957. No personalities are mentioned.

Rankin, L.W. ... at the end of most of the papers. A.K. Makarov, M. S. Rogachev, L.A. Brodskiy, B.I. Verzhovskiy, labor, avtomaticheskoy upravleniya, i t.d. Rubinshatyn (Center, Leningrad, stateproekt, Chern. Metallurgii SSSR); Ye. Institut lurg. zavod "Zaporozhstal", i Inst. Otkono-Kamennoy zavod; metal- tion Laboratory of the Ministry of Ferrous Metallurgy, USSR; Institute of Physics Imeni P.M. Labodev, Acad. Metallurgy, USSR; Leningrad Steel Rolling Mill and Steel Rope Plant, USSR; Leningrad Plant "Zaporozhstal" Imeni Ordzhonikidze; Use of Paratus for the Measurement of the Thickness of Rolled Steel and Coatings

Verzhovskiy, M.S. (Oneprotrivskiy zavod "Zaporozhstal" - Dnepropetrovsk "Zaporozhstal" Plant). Use of Thickness Gauges at the "Zaporozhstal" Plant. 240  
Taksar, I.K. and V.A. Yanzhikovskiy (Institut Fiziki Akademi nauk Latvyskoy SSR Imeni P. M. Lazdusa, Academy of Sciences, Latvian SSR). Consideration of the Control-Signal Statistics in Recording Radioactive Radiation With Relay-type Instruments 241

Layzhay, Y.K., V.V. Lyudin, S.V. Medvedev, Yu. S. Pliskin, I.K. Tachenko, and V.I. Shul'ga (Institut metallovedeniya i fiziki metallov Tomskom - Institute of Metallurgy and the Physics of Metals, Tomsk). Certain Problems in Designing Gamma-Ray Level Indicators 247

Ovcharukho, Ye. Ye. (Konstruktorskiye byuro "Yevstektavtomatiki" NPI SSSR - Design Engineering Office of "Yevstektavtomatiki", USSR). Use of Scintillation Counters With Electron Modulation for Gamma Radiation Recording 252

Shnur, I.K., and V.A. Yanzhikovskiy (Institut Fiziki AN Latvyskoy SSR - Institute of Physics, Academy of Sciences, Latvian SSR). Portable Radioactive Level Indicators 255

BRUK, Ye. A. - Level Indicator for Free-Flowing Materials 258

BRIKALIY, G.I.; LINSKIY, V.S.

Constituent program for a one-address machine. Vop. teor. mat.  
mash. no.2:144-155 '62. (MIRA 15:8)  
(Programming (Electronic computers)) (Electronic calculating machines)

L 28437-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6017976

SOURCE CODE: UR/0413/66/000/010/0079/0079

INVENTOR: Yenikolopov, N. S.; Karmilova, L. V.; Konareva, G. P.; Plechova, O. A.;  
Vol'fson, S. A.; Brikshteyn, A. A.

ORG: none

TITLE: Preparative method for heat-resistant copolymers of trioxane. Class 39,  
No. 181808

SOURCE: Izobreteniya, promyshlennyye obratzay, tovarnyye znaki, no. 10, 1966, 79

TOPIC TAGS: heat resistant copolymer, trioxane, cyclic ether, copolymer

ABSTRACT: An Author Certificate has been issued for a preparative method for heat-resistant copolymers of trioxane and cyclic ethers such as 1,3,6-trioxacyclo-octane, 1,3,7-trioxacyclododecane, or 1,3,8-trioxacyclododecane. The method involves bulk copolymerization of the monomers in the presence of cationic catalysts, first below the mp and then above the mp of the monomers. [BO]

SUB CODE: 07,11/ SUBM DATE: 02Jun64/ ATD PRESS: 5006

Card 1/1

L 13812-66 EWI(m)/EWP(1)/T RM

ACC NR: AP6002470

(A)

SOURCE CODE: UR/0191/66/000/001/0003/0006

AUTHORS: Berlin, A. A.; Kefeli, T. Ya.; Belkin, A. A.; Ragimov, A. V.;  
Llogon'kiy, B. I.; Brikenshteyn, Kh. A.

42  
41  
25

ORG: none

TITLE: On the catalytic and inhibiting influence of certain polysulfophenyl-quinones on the telomerization condensation reaction

SOURCE: Plasticheskiye massy, no. 1, 1966, 3-6

TOPIC TAGS: polymer, polymerization, catalytic polymerization, high polymer, polymerization kinetics, polymerization rate

ABSTRACT: The catalytic and inhibiting effects of polysulfophenylquinone (obtained by reacting p-benzoquinone with bis-diazotized benzidine-disulfo-2,2' acid (PSFKh-3) in the mole ratio of 1:3) on the condensation telomerization of digo-esteracrylates, dimethylmethacrylate of diethylene glycol (MD) and dimethylmethacrylate-bis-diethyleneglycol)phthalate (MDF-1) were studied. The method used was that described by A. A. Berlin, T. Ya. Kefeli, and G. V. Korolev (Khim. prom., No. 12, 12, 1962). The kinetics of water elimination during the synthesis of MD in the presence of sulfuric acid and PSFKh-3, and the effect on PSFKh-3 of the ion exchange properties of synthesized esters were investigated. The experimental

Card 1/2

UDO: 678.764.43:678.044.1:547.567

L 13812-66

ACC NR: AP6002470

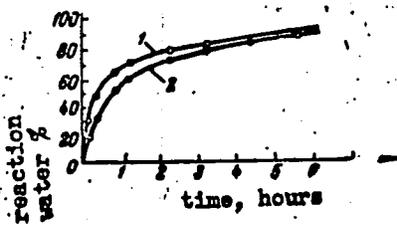


Fig. 1. Kinetics of elimination of water-reaction during the synthesis of MD. 1 - in presence of sulfuric acid; 2 - in presence of PSFKh-3.

results are presented in tables and graphs (see Fig. 1). It was found that the highest yield of polymer was obtained for an initial catalyst concentration of 25 wt. % and for catalyst particle size  $< 0.25$  mm. Orig. art. has: 1 table, 3 graphs, and 1 equation.

SUB CODE: 0711 / SUBM DATE: none / ORIG REF: 012 / OTH REF: 002

PC  
Card 2/2

BRIKER, A.S.

Actual service tests on the strength of "Dnieproges"-type diesel-  
electric ships. Inform. sbor. NIIMF no.47. Tekh. ekspl. mor.  
flota no.3:58-64 '60. (MIRA 15:1)

(Ship trials)

BRIKER, A.S.; CHETYRKIN, N.V.

Design and strength of the hull of the motorship "Ugleural'sk."  
Inform. sbor. TSNIIMF no.59. Tekh. ekspl.mor.flota no.7:62-72  
'61. (MIRA 16:6)

(Hulls (Naval architecture))

BRIKER, A.S.

Breakdown of the steamship "Kaluga." Infomr. sbor. TSNIIMF no.75 Tekh.  
ekspl. mor. flota no.14:95-102 '62. (MIRA 16:3)  
(Steamboats--Maintenance and repair)  
(Shipbuilding materials)

BRIKER, A.S.; KULTASHEV, Ye.N., inzh.

Utilizing the hull space in "Arkhangel'sk"-type motorships.  
Biul.tekh.-ekon. inform. Tekh.upr.Min.mor.flota 7 no.10:  
15-28 '62. (MIRA 16:9)

1. Tsentral'nyy nauchno-issledovatel'skiy institut morskogo flota.  
(Hulls (Naval architecture)) (Cargo handling)

BRIKER, A. S., inzh.; GAVRILOV, M. N., inzh.; KULTASHEV, Ye. N., inzh.

"Dzhanskoy"-type coal and ore carriers. Sudostroenie 28 no.10:  
1-3 0 '62. (MIRA 16:1)

(Coal-carrying vessels)  
(Ore carriers)

BRIKER, A.S.

Effect of hollows in the hull plating on the general strength  
of the ship. Trudy TSNIIMF no.66:38-56 '65.

(MIRA 18:12)

FEL'DMAN, I.Kh.; MIKHEYEVA, L.F.; Prinsipali uchastiye: BOCHKOVA, V.P.;  
BRIKER, A.V.

Amino sulfides and amino sulfones. Part 25: Addition of  
p-acetoaminophenylsulfonic acid to certain aldehydes. Zhur.-  
ob.khim. 32 no.4:1046-1050 Ap '62. (MIRA 15:4)

1. Leningradskiy khimiko-farmatsevticheskiy institut.  
(Benzenesulfonic acid) (Aldehydes)

LOGVINOVICH, E.G.; BRIKER, F.Yu.; DEGTEVA, S.F.; TSYGANKOVA, G.I.

Operational and economic efficiency of heavy-tonnage tankers.  
Trudy TSNIIIMF 54:39-53 '64 (MIRA 18:1)

110923-67

ACC NR

AR6034796 (W) SOURCE CODE: UR/0398/66/000/008/A003/A003

12

AUTHOR: Logvinovich, E. G.; Briker, F. Yu.; Moreynis, F. A.

TITLE: Selection of basic characteristics for a cargo ship designed for service on the waterway connecting the Black and Baltic Seas

SOURCE: Ref. zh. Vodnyy transport, Abs. 8A17

REF SOURCE: Tr. Tsentr. n. -i. in-ta morsk. flota, vyp. 67, 1965, 56-79

TOPIC TAGS: inland waterway, cargo ship, ship component, ship characteristic

ABSTRACT: Cargo ships for service on the waterway connecting the Black and Baltic Seas are designed for transporting ore, fertilizer, and metals. The ships must meet the navigation requirements for sea basins, rivers, and canals. The length and width of ships, height of sides, and coefficient of submerged parts are selected according to these requirements. The hull design and distribution of holds are determined by the nature of cargoes transported. Models are tested in the basin of the Leningrad Water Transportation Institute (LIVT) and serve as the basis for determining the speed and power of the main engines. The weight load, stability, and rolling of the ship are analyzed, providing technical characteristics in the first

Card 1/2

UDC: 629.12.001.2

ACC NR: AR6034796

approximation for a ship for combined sea and river navigation. Orig. art. has:  
6 figures. Bibliography of 9 titles. Ye. Sukacheva. [Translation of abstract]

SUB CODE: 13/

Card 2/2 *bpp*

GUREVICH, V.F.; BRIKER, K.A.

Compensator for controlling electromagnetic interferences  
caused by electric transmission lines in seismic prospecting.  
Neftegaz. geol. i geofiz. no.3:39-40 '65. (MIRA 18:7)

1. Azerbaydzhanskiy nauchno-issledovatel'skiy institut po  
dobyche nefti.

BRIKER, M.L., inzh.

New equipment for cleaning oil, fuel, and air filters of diesel locomotives. Elek. i topl. tiaga 3 no.4:44-45 Ap '59.

(MIRA 12:7)

(Railroads--Equipment and supplies)

(Diesel locomotives--Maintenance and repair)

(Filters and filtration)

BRIKER, M.L., insh.

Hoisting cranes for locomotive repair shops. Zhel.dor.transp.  
45 no.8:72-75 Ag '63. (MIRA 16:9)  
(Railroads--Repair shops) (Electric cranes)

BRIKER, M.L., inzh.; MINCHENKO, N.I., kand. tekhn. nauk

Instruments for the inspection of locomotive steam distributors. Zhel.dor.transp. 41 no.11:76-78 N '59.

(MIRA 13:2)

(Locomotives--Testing)

BRIKER, M.L., inzh.; CHISTYAKOV, M.A., inzh.

KZh-20 milling machine for facing wheels. Elek.i tepl.tiaga  
4 no.1:30-32 Ja '60. (MIRA 13:4)  
(Electric locomotives--Maintenance and repair)  
(Car wheels)

BRIKIC, Djordje

Treatment of chronic colitis. Med. glasn. 10 no.3:103-109  
March 56.

1. II Interna klinika Medicinskog fakulteta u Beogradu (upravnik,  
prof. dr. Dj. Brkic).  
(COLITIS, ther.  
of chronic colitis (Ser))

BRIKIN, S. V.

"Investigation of the Bearing Capacity of Prestressed Beams Provided with  
Spiral Reinforcement."

paper presented at the 6th Intl. Congress for Bridge and Structural Engineering,  
Stockholm, Sweden, 27 June - 1 July 1960.

L 14928-63 EPF(n)-2/EWT(m)/BDS AFFTC/ASD/AFWL/SSD Pu-4 DM  
ACCESSION NR: AP3003984 8/0089/63/015/001/0074/0076

AUTHORS: Mirzoyan, A. R.; Brikker, I. N. 60

TITLE: Frequency analysis of circuits for reactor starting. 19

SOURCE: Atomnaya energiya, v. 15, no. 1, 1963, 74-76

TOPIC TAGS: reactor start-up, frequency analysis, reactor circuit, transfer function

ABSTRACT: The frequency analysis of the regulating systems for reactor start-up requires a knowledge of the transfer function of the reactor kinetics. While it is known for the stationary conditions, it has not been fully worked out for the starting. The authors derived this function explicitly. It was found to be identical with the result of L. Zadeh (Proc. I. R. E. 38, 1950, 291) used for analysis of linear systems with variable parameters. A block diagram for the stability of the reactor period is given. Orig. art. has: 3 figures and 11 equations.

ASSOCIATION: none  
SUBMITTED: 02Oct62  
SUB CODE: PH  
Card 1/1

DATE ACQ: 08Aug63  
NO REF SOV: 001

ENCL: 00  
OTHER: 004

L 06158-67 EWT(m) JR

ACC NR: AP6024535

SOURCE CODE: UR/0089/66/021/001/0009/0013

AUTHOR: Brikker, I. N.

ORG: none

TITLE: Inverse solution of the nuclear reactor kinetics equations

SOURCE: Atomnaya energiya, v. 21, no. 1, 1966, 9-13

TOPIC TAGS: nuclear reactor control, multiplication factor, reactor neutron flux, kinetic equation

ABSTRACT: Whereas the standard procedure for solving the kinetic equations is to determine the variation of the neutron density  $n(t)$  for a prescribed variation of the multiplication coefficient  $K_{eff}$ , the author proposes to find a functional that yields the variation of  $K_{eff}$  for a known change in  $n(t)$ . This makes it possible to determine the following: 1)  $K_{eff}$  if  $n(t)$  is known for all preceding instants of time; 2) find, during the course of reactor design, the variation of  $K_{eff}$  needed in order for  $n(t)$  to change in accord with a prescribed law; 3) determine the characteristics of the actuating mechanism and of the control rods needed to ensure a specified variation of  $n(t)$ . The appropriate differential equations for  $n(t)$  are derived and their solutions are used to determine the variation in reactivity necessary to change the power level (a) exponentially with a prescribed period, (b) linearly, and (c) in accordance with a more complicated law. The author thanks A. I. Mogil'ner, A. B. Almazov, and A. R. Mirzoyan for a discussion and valuable remarks, and I. V. Nazarova for plotting the

30  
E

17

Card 1/2

UDC: 621.039.515

L 06458-67

ACC NR: AF6024535

curves and help in preparing the paper. Orig. art. has: 3 figures and 26 formulas.

SUB CODE: 18/ SUBM DATE: 20Nov65/ ORIG REF: 001/ OTH REF: 005

Card

2/2

L 42823-66 EWI(d)/EWP(v)/EWP(k)/EWR(h)/EWP(l) BC

ACC NR: AP6029545

SOURCE CODE: UR/0103/66/000/008/0052/0064

AUTHOR: Brikker, I. N. (Moscow)

45  
B

ORG: none

TITLE: Frequency analysis of linear systems with variable parameters

SOURCE: Avtomatika i telemekhanika, no. 8, 1966, 52-64

TOPIC TAGS: automatic control, linear control system, ~~variable parameter, system,~~  
frequency analysis, ~~generalized transfer function, bifrequency transfer function~~

*function analysis*

ABSTRACT: This article <sup>4</sup>deals with the frequency analysis of automatic control systems described by linear differential equations with time-dependent coefficients. To generalize certain results obtained for linear control systems with constant parameters and to derive new ones, the concept of the generalized transfer function  $V(s, \tau)$  (the Laplace transform whose inverse is the frequency response function  $w(t - \tau, \tau)$  considered as a function of  $t$  at a fixed value of  $\tau$ ) is introduced. A criterion is derived which makes it possible to determine the stability of the system on the interval on the basis of distribution of poles of  $V(s, \tau)$  on the complex plane. The concept of the bifrequency transfer function  $W(s, p)$  is also introduced and a criterion of the absolute stability of a linear system with variable parameters is established, utilizing the convergence characteristics of  $W(s, p)$ . The problem

Card 1/2

UDC: 62-501.132

L: 42823-66

ACC NR: AP6029545

of approximate determination of the generalized and of the bifrequency transfer functions is considered. A method of determining these functions in the form of uniformly and absolutely convergent series is presented. The problems of determining generalized and bifrequency transfer functions in circuits with connections in parallel, in series, or with feedback are analyzed. Orig. art. has: 6 figures and 82 formulas.

[LK]

SUB CODE: <sup>0913</sup> ~~09~~ SUBM DATE: 30Nov65/ ORIG: REF: 005/ OTH REF: 002 *ATD Puss 5065*

Card 2/2 *Sh*

BRIKKER, S. I.

PA 60778

USSR/Nuclear Physics - Cosmic Rays Jul 1947  
Nuclear Physics - Counters, Electronic

"Study of the Transitional Effect of Cosmic Rays  
in the Stratosphere With Counters," S. I. Brikker,  
S. N. Vernov, I. M. Yevreinova, S. P. Sokolov, T. N  
Charakhoh'yan, Phys Inst Imeni P. N. Lebedev, Acad  
Sci USSR, and Moscow State U Imeni M. V. Lomonosov,  
4 pp

"Dokl Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Counters used to measure transitional effect at  
altitudes of 10-26 km. Accomplished by pibal equip-  
ment. Impulses of particles, piercing lead cover

60778

USSR/Nuclear Physics - Cosmic Rays Jul 1947  
(Contd)

of the apparatus, picked up by radio receivers on  
ground, then channelled through counters. Sub-  
mitted by Academician S. I. Vavilov, 12 May 1947.

60778

BRIKKER, S. I.

PA 11/49T90

USSR/Nuclear Physics - Cosmic Radiation Aug 48  
Nuclear Physics - Electrons

"Transitional Effect of Cosmic Rays in the Strato-  
sphere," S. I. Briker, S. N. Vernov, N. L.  
Gribov, I. M. Yevreinov, T. N. Charakhoh'yan,  
Phys Inst imeni P. N. Lebedev, Acad Sci USSR and  
Moscow State U imeni M. V. Lomonosov, 2 1/2 pp

"Dok Ak Nauk SSSR" Vol LXI, No 4

Continues previous experiments (see 60T78).  
Measures transitional effect with various thick-  
nesses of lead plate at altitude of 9, 20 and  
24.5 km by means of balloons. Shows results

USSR/Nuclear Physics - Cosmic Radiation Aug 48  
(Contd)

11/49T90

graphically. Shows there is great number of  
electrons in stratosphere whose energy is very small  
( $\sim 10^8$  eV). Submitted 9 Jun 48.

11/49T90

PLUMMER, S. I.

... proton flux in the range 1.5-7 de  
... 20 MeV ... in generating the electron  
... component. It is also deduced that a  
... of 20 MeV produces ...

BRIKKER S.I.

20-1-18/54

**AUTHOR:** Alekseyeva, K.I., Brikker, S.I., Grigorov, N.L., Savin, F.D.,  
Shcherbakov, N.A.

**TITLE:** Determination of the Flux of Primary Cosmic Ray Particles at  
31° N. Latitude  
(Opredeleniye potoka pervichnykh kosmicheskikh chastits na shirote  
31° N.)

**PERIODICAL:** Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 1, pp. 71 - 74  
(USSR)

**ABSTRACT:** On the occasion of the determination of the cross-section of  
the non-elastic interaction of the cosmic ray particles with  
the nuclei of carbon and hydrogen the authors determined the  
intensity of the hard components in stratosphere. These measure-  
ments made possible the determination of the flux of the cosmic  
particles at the border of atmosphere. The authors describe the  
apparatus for the measurements of the cross-section of non-  
elastic interaction as well as the results of the measurements  
of the intensity of hard components. (The results of the measure-  
ments of the cross-sections shall be published in later works).  
The scheme for the arrangement of the filters as well as of the  
counter is shown by means of a sketch. The telescope and the  
filters were surrounded by many hodoscopic counters for the re-

Card 1/3

20-1-18/54

Determination of the Flux of Primary Cosmic Ray Particles at  $31^{\circ}$  N. Latitude

gistration of secondary particles. Furthermore three series of telescopic counters were connected in form of a hodoscope. The impulse for the control of this apparatus was the triple coincidence in the three series of counter. All results obtained with these apparatuses were transmitted to the ground by radio. The elaboration of the measurement results obtained this way are discussed for the following cases: single particle, shower which developed outside the filter, shower in the upper part of the apparatus and shower in the lower part of the apparatus. The course of particles as a function of altitude which cause no interactions in a Pb and Al filter is shown by a diagram. Another curve shows the number of the nuclear interactions in Pb and Al filter. Another curve is the sum of the two mentioned curves, that is to say, it characterizes the total flux of the particles of the hard component at various altitudes. This flux is 2,0 particles/cm<sup>2</sup> mm. sterad at the border of atmosphere. In the end the results obtained are compared with those of other authors. There are 2 figures.

Card 2/3

20-1-18/54

Determination of the Flux of Primary Cosmic Ray Particles at  $31^{\circ}$  N. Latitude

ASSOCIATION: Moscow State University im. M. V. Lomonosov  
(Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova)

PRESENTED BY: D.V. Skobel'tsyn, Academician, January 15, 1957

SUBMITTED: January 12, 1957

AVAILABLE: Library of Congress

Card 3/3

S. E. Brikker

STUDIES OF LARGE IONIZATION BURSTS BY THE METHOD  
OF "CONTROLLED PHOTOGRAPHIC EMULSIONS"

S. E. Brikker, N. L. Grigorov, M. A. Kondratyeva,  
A. V. Podgurskaya, A. I. Savelieva, V. Ya. Shestoperov

1. Electron-sensitive photographic plates were irradiated at 3200 m. above sea level in a special apparatus, which a) recorded large ionization bursts with the number of particles  $\approx 1000$ , and b) indicated through which of the photographic plates (covering the entire sensitive area of the apparatus) the shower has passed that produced the given "burst".

2. The analysis showed that:

- a) the majority of "bursts" are created by showers of electrons generated in the apparatus by nuclear-active particles of high-energy;
- b) the showers most often consist of one principal "core" apparently created by a single gamma quantum of sufficiently high energy;
- c) in cases when the shower contains several laterally separated "cores", one of the "cores" is taken as rule, responsible for the bulk of the particles in the shower, that is, in the recorded ionization "burst";
- d) if in showers that contain two or more "cores", the total energy of the whole shower is taken as unity, the energy distribution of the individual showers comprising the given shower may be approximated by a power function.

Report presented at the International Cosmic Ray Conference, Moscow, 6-11 July 1959

21(7)

AUTHORS:

Alekseyeva, K. I., Brikker, S. I., Grigorov, N. L., Murzin, V. S., Savin, F. D. ~~SOV/56-37-3-2/62~~

TITLE:

Investigation of the Production of  $\pi^0$ -Mesons in the Stratosphere in the Case of Interaction of Protons and  $\alpha$ -Particles of Cosmic Rays With Carbon Nuclei

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 3(9), pp 596 - 603 (USSR)

ABSTRACT:

In the present paper the authors describe the carrying-out of and the results obtained by experiments serving the purpose of determining the average  $\pi^0$ -energy at an altitude of 25 km. The experiments themselves had taken place on September 20, 1954 at a geomagnetic latitude of  $54^\circ$  N; measurement data were transmitted to the earth radiotelegraphically. For the purpose of determining  $E_{\pi^0}$ , the ionization in the maximum of the  $\pi^0$ -cascades occurring in  $\pi^0$ -decay was measured. The average primary energy of the protons  $E_{op}$  was 20 Bev, that of the  $\alpha$ -particles  $E_{o\alpha}$  amounted to 40 Bev. The experimental arrangement (schematically shown by figure 1) consisted essentially of pulse ioni-

Card 1/4

Investigation of the Production of  $\pi^0$ -Mesons in the SOV/56-37-3-2/62  
Stratosphere in the Case of Interaction of Protons and  $\alpha$ -Particles of Cosmic  
Rays With Carbon Nuclei

zation chambers and a hodoscope. The counters were Geiger-Mueller counters connected in triple coincidence. The entire arrangement is described in detail. The results are shown in form of a table and by figure 2. Figure 2 in three diagrams shows the number of showers  $N$ , in which the given ionization was found, as a function of  $J/J_0$  in the lower chamber (II).  $J_0$  denotes the probable ionization of a relativistic simply charged particle,  $J$  the ionization of the given particle. The uppermost diagram contains the range  $0 < (J/J_0)_I < 30$ , the middle one  $3.0 < (J/J_0)_I < 7.5$ , and the third  $(J/J_0)_I > 7.5$ . The unbroken lines refer to measurements carried out with the help of a graphite filter, the dotted lines show the spectrum without such a filter. The average number of the electrons  $\bar{N}$  in the maximum of the  $\gamma$ -cascade is calculated by means of formula (2). Results:

Card 2/4

Investigation of the Production of  $\pi^0$ -Mesons in the SOV/56-37-3-2/62  
 Stratosphere in the Case of Interaction of Protons and  $\alpha$ -Particles of Cosmic  
 Rays With Carbon Nuclei

$J/J_0$  in chamber I  
 $\bar{V}$   
 Number of electrons in the  
 avalanche  $N_{max}$

$\bar{E}_{\pi^0}$  [ev]  
 $(\bar{E}_{\pi^0}/\bar{E}_0) \cdot 100$  [%]

Primary particles:	
protons	$\alpha$ -particles
0 - 3.0	3.0 - 7.5
$11.4 \pm 3.5$	$32.2 \pm 23.0$
$26 \pm 8$	$73 \pm 52$
$(2.1 \pm 0.6) \cdot 10^9$	$(5.8 \pm 4.2) \cdot 10^9$
$10 \pm 3$	$14 \pm 10$

For the determination of  $N_{max}$  formula (1) by Tamm and Belen'kiy  
 is used. For the given primary energies of protons and  $\alpha$ -  
 particles (20 and 40 Bev respectively) the following values  
 are obtained for the energy fraction  $k$  contributed by these  
 particles for  $\pi^0$ -production:  $k_p = (10 \pm 3)\%$  and  $k_\alpha = (14 \pm 10)\%$ .

L. G. Landsberg participated in this work. The authors thank  
 I. P. Ivanenko for discussions. There are 2 figures, 1 table,  
 and 10 references, 7 of which are Soviet.

Card 3/4

Investigation of the Production of  $\pi^0$ -Mesons in the Stratosphere in the Case of Interaction of Protons and  $\alpha$ -Particles of Cosmic Rays With Carbon Nuclei SOV/56-37-3-2/62

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: March 7, 1959

Card 4/4

M. P. BABAYAN, S. I. BRIKKER, N. L. GRIGOROV, A. V. PODGURSKAYA,  
A. I. SAVELYEVA, V. Ya. SHESTOPEROV

Investigation of Nuclear Interaction at  $10^{13}$  ev by means of "Controlled"  
Photoemulsions Method

report submitted for the 8th Intl. Conf. on Cosmic Rays (IUPAP), Jaipur India,  
2-14 Dec 1963

BABAYAN, Kh.P.; BRIKKER, S.I.; GRIGOROV, N.L.; PODGURSKAYA, A.V.;  
SAVEL'YEVA, A.I.; SHESTOPEROV, V.Ya.

Generation of  $\pi^-$ -mesons at particle energies of  $5 \cdot 10^{12}$  to  $10^{13}$  ev. X  
Izv. AN SSSR. Ser. fiz. 28 no.11:1784-1789 N '64.

(MIRA 17:12)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennyy universiteta im. M.V. Lomonosova i Institut fiziki Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.

ACCESSION NR: AP4042411

S/0056/64/047/001/0379/0381

AUTHORS: Babayan, Kh. P.; Brikker, S. I.; Grigorov, N. L.; Podgurskaya, A. V.; Savel'yeva, A. I.; Shestoporov, V. Ya.

TITLE: Study of the generation of neutral pions at particle energy 5000 to 10000 GeV

SOURCE: Zn. eksper. i teor. fiz., v. 47; no. 1, 1964, 379-381

TOPIC TAGS: cosmic ray measurement, neutral pi meson, nuclear emulsion, ionization chamber, gamma reaction, cosmic ray burst, inelastic scattering

ABSTRACT: The study was made using the method of "controlled nuclear emulsions" developed by the authors (Nuovo cimento supplement v. 8, 733, 1958; Trudy\* Mezhdunarodnoy konferentsii po kosmicheskim lucham [Transactions of International Conference on Cosmic Rays] v. 1, AN SSSR, 1960, page 122; Materialy\* soveshchaniya po metodike tol-

1/5

ACCESSION NR: AP4042411

stosloyny\*kh fotoemul'siy [Materials of Conference on Thick-Layer Emulsion Procedure] 1, OIYaI, 1957, page 168). The test array consisted of nuclear emulsions interlined with lead filters and placed over an array containing a large number of ionization chambers. Interaction of the nuclear active particle in the generator (graphite 20 g/cm<sup>2</sup> thick) located 150 cm over the nuclear emulsions produces, as a result of the neutral pion decay, gamma quanta which strike the lead filters with the emulsions and move hundreds of microns apart. Consequently the electron-photon showers produced by the gamma quanta in the lead are recorded by the emulsions as individual lines. Six showers with total gamma-quantum energy exceeding  $2 \times 10^{12}$  eV were recorded. The results indicate the following: 1. Most ionization bursts result from such interactions when the inelasticity coefficient K is close to unity, and the neutral pions receive on the average about 80% of the primary-particle energy. 2. Approximately four neutral pions are generated in these interactions, much lower than the average multiplicity at the correspond-

2/5

ACCESSION NR: AP4042411

ing primary energy. 3. In these interactions one neutral pion receives on the average about 50% of the primary particle energy. This energy transfer causes the large fluctuations in the neutral-pion inelasticity constant. It is shown further that this energy transfer is not the product of the decay of isobars with mass  $M \leq 2M_{\text{nucleon}}$ . The probability of the latter event is less than 0.5, so that it is improbable that the high-energy pions result from the decay of known baryon isobars. Orig. art. has: 2 figures, 1 formula, and 1 table.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Nuclear Physics Institute, Moscow State University); Fizicheskiy institut GKAE, Yerevan (Physics Institute GKAE)

SUBMITTED: 28Sep63

ENCL: 02

SUB CODE: NP

NR REF SOV: 005

OTHER: 001

3/5

BRIKKER, V.N.

Comparison of electrical and mechanical systoles as a method for myocardial function tests. Terap.arkh. 32 no.12:72-79 '60.

(MIRA 14:2)

1. Iz kafedry (zav. - prof. A.A. Kedrov) fakul'tetskoy terapevticheskoy kliniki Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

(HEART)

BRIKKER, V.N.

Determination of the amount of potassium and sodium by flame  
photometry. Lab. delo 7 no. 7:3-6 JI '61. (MIRA 14:6)

1. Kafedra fakul'tetskoy terapevticheskoy kliniki (zav. - prof.  
A.A. Kedrov) Leningrad'skogo sanitarno-gigiyenicheskogo meditsinskogo  
instituta.

(PHOTOMETRY) (POTASSIUM IN THE BODY)  
(SODIUM IN THE BODY)

BRIKKER, V. N.

Effect of electrolyte balance disorders on the duration of mechanical systole. Cor vasa 4 no.2:103-113 '62.

1. Therapeutische Fakultatsklinik des sanitär-hygienischen medizinischen Instituts, Leningrad.

(MYOCARDIAL INFARCT diag) (ELECTROCARDIOGRAPHY)  
(WATER ELECTROLYTE BALANCE)

BRIKKER, V. N.

Dissertation defended at the Institute of Physiology imeni I. P. Pavlov  
for the academic degree of Candidate of Medical Sciences: 1962.

"Functional Condition of the Myocardium in Atherosclerosis of Coronary  
Arteries, Rheumatism, and Several Myocardiodystrophies Related to  
Disturbance of Electrolytic Balance."

Vestnik Akad Nauk, No. 4, 1963, pp. 119-145

BRIKKER, V.N.

Effect of disorders of electrolyte balance on the function of the cardiovascular system; a review of literature. Kardiologiya 3 no. 6:65-69 M-D '63. (MIRA 17:6)

1. Iz kliniki vnutrennikh bolezney (zav. - prof. A.A. Kedrov)  
Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

ERIKKER, V.N.

Determination of the content of electrolytes in human erythrocytes. Lab. delo 8 [i.e.9] no.1:14-15 Ja '63.

(MIRA 16:5)

1. Klinika vnutrennikh bolezney (zav.-prof. A.A.Kedrov) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.  
(ELECTROLYTES) (ERYTHROCYTES)

~~BRIKKER~~, V.N.; SHLYASSKAYA, E.M.

Change in the electrocardiogram under the influence of potassium.  
Ter. arkh. 35 no.7:36-41 J1'63 (MIRA 17:1)

1. Iz kliniki vnutrennikh bolezney No.1 (zav. - prof. A.A. Kedrov) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta i 1-y ob'yedinennoy bol'nitsy (glavnyy vrach A.N.Basov) Kirovskogo rayona Leningrada.

BRIKKER, Vladimir Naumovich; KONDRAT'YEV, V.G., red.

[Disorder of electrolyte metabolism in cardiovascular diseases] Narushenie elektrolitnogo obmena pri serdechno-sosudistykh zabolevaniakh. Leningrad, Meditsina, 1965.  
180 p. (MIRA 18:2)

BRIKKEK, V.N.

Duration of the interval Q - 1st sound in atherosclerosis of  
the coronary arteries. Kardiologiya 5 no.1:73-74 Jan 1965.

(MIRA 18:9)

1. Klinika vnutrennikh bolezney (zav.- prof. A.A. Kedrov) lenin-  
gradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

KLYUCHNIKOVA, V.M., aspirantka; BRIKKEER, Ye.B., student; ZYBIN, Yu.P.,  
prof., doktor tekhn.nauk

Effect of the construction of uppers on time expended for  
machine sewing. Izv.vys.ucheb.zav.; tekhn.prom. no.1:  
89-99 '59. (MIRA 12:6)

1. Moskovskiy tekhnologicheskiy institut legkoy promyshlennosti.  
Rekomendovana kafedroy tekhnologii obuvi.  
(Shoe manufacture)

DATA INCL

BRIK'KO, I., geroy sotsialisticheskogo truda

Teh five-year plan has been fulfilled in advance. Mast. ugl. 4  
no. 8:3 Ag'55. (MLRA 8:10)

1. Nachal'nik uchastka shakhty no. 5-6 imeni Dimitrova Stalinskoy  
oblasti

(Donets Basin--Coal mines and mining)

BRIKLYA, M. F., OBUSHINSKIY, I. YE.

USSR (600)

Sugar Industry

Boiling off the strike without use of acid. Sakh. prom 26 no. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 195~~8~~, Uncl.